STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

COMMONWEALTH EDISON COMPANY,	)	
	)	
Approval of the Energy Efficiency and	)	Docket No. 07-0540
Demand-Response Plan Pursuant to Section 12-103(f) of	)	
the Public Utilities Act	)	

Rebuttal Testimony of

NICHOLAS P. HALL

President, TecMarket Works

On Behalf of Commonwealth Edison Company

December 21, 2007

ComEd Ex. 13.0

TABLE OF CONTENTS

I. Introduction

A. Identification of Witness

Q. Please state your name.

A. Nicholas P. Hall.

Q. Are you the same Nicholas P. Hall who submitted direct testimony on behalf of Commonwealth Edison Company ("ComEd") in this docket?

A. Yes. My initial testimony is ComEd Exhibit 7.0.

B. Purpose of Testimony

Q. What are the purposes of your rebuttal testimony?

A. The purposes of my rebuttal testimony are to respond to:

- Staff of the Illinois Commerce Commission ("Staff") witness Mr. Zuraski's direct testimony regarding the determination of energy savings for weather-sensitive measures;
- Mr. Zuraski's policy considerations regarding ComEd's proposal to annualize energy savings;
- People of the State of Illinois ("AG") witness Mr. Mosenthal's statements regarding the adequacy of the 3% EM&V budget;
- evaluation activities suggested by the Environmental Law & Policy Center's ("ELPC") witness, Mr. Crandall;
- Mr. Zuraski's comments to ComEd's proposal to deem certain measure savings and net-to-gross ("NTG") ratio values; and
- Mr. Mosenthal's concerns regarding the deemed values.

C. Summary of Conclusions

Q. Please summarize your conclusions.

A. (1) I agree with Mr. Zuraski's proposal regarding the determination of energy savings for weather-sensitive measures.

(2) The Illinois Commerce Commission ("ICC" or "Commission") should approve ComEd's proposal to annualize savings, which to my knowledge is consistent with the approach taken in every other state that has implemented energy efficiency programs.

(3) The 3% evaluation budget, while not "unreasonably" low, is in fact low compared to the average evaluation budgets of other states. Despite this, ComEd has proposed an evaluation, measurement and verification ("EM&V") process that comports with the industry standard and that properly is focused on measuring program impacts.

(4) The Commission should adopt ComEd's proposal and deem certain measure savings values and NTG ratio values, with any future changes to the values to be applied prospectively.

II. Determination of Energy Savings for Weather-Sensitive Measures

Q. Do you agree with Staff witness Mr. Zuraski's recommendations that after-the-fact energy savings be based on normalized weather conditions, rather than actual weather conditions (Staff Ex. 1.0, pp. 47-48)?

A. Yes. Mr. Zuraski's testimony is consistent with the standard approach to evaluating and crediting savings. Generally, the program-induced savings for weather-sensitive measures are calculated for normal weather consistent with the geographical areas in which the programs are operated and the installation and use of the technologies within those weather areas. This is preferable to the alternative, basing energy savings on actual weather, because actual weather is too variable and will skew the value of the measures due to fluctuations from year-to-year.

III. Annualization of Savings

Q. What is your response to Staff witness Mr. Zuraski's discussion of the public policy effects of ComEd's proposal to annualize savings? (Staff Ex. 1.0, pp. 14-17.)

A. As an initial matter, I am pleased that no other parties filing direct testimony in Docket No. 07-0540 questioned ComEd's proposal in its Plan (ComEd Ex. 1.0) and in the direct testimony of Michael Brandt (ComEd Ex. 2.0) to annualize savings. While Mr. Zuraski's testimony raises some interesting public policy issues regarding annualization, he also states that he does not know if the percentage savings goals in Section 12-103(b) of the Public Utilities Act "are realistic either with or without annualizing savings." (Staff Ex. 1.0, p. 16.) In fact, Mr. Brandt points out in his direct testimony that "any other method of calculating savings would make the statutory goals unattainable." (ComEd Ex. 2.0, p. 48.) Mr. Zuraski's marathon analogy is therefore applicable.

Q. Are you aware of any state that does not annualize savings as part of its evaluation of energy efficiency programs?

A. No. To the best of my knowledge, no state implementing energy efficiency programs credits energy savings by any other approach other than the standard annualized approach. This is true for California, Idaho, Indiana, Kentucky, Massachusetts, Montana, Nevada, New York, Ohio, Oregon, Washington and Wisconsin. The United States Department of Energy also adheres to this approach. In fact, in over thirty years of working with regulatory staff in other states on these types of programs, I never have seen a utility required to determine energy savings on a monthly or quarterly basis. I believe that, like all of these other states, Illinois should adopt an annualized savings approach.

IV. Evaluation, Measurement & Verification (EM&V)

A. Adequacy of the Evaluation Budget

Q. In his direct testimony, Mr. Mosenthal disagrees with your "characterization that 3% of spending on evaluation is unreasonably low and well below other jurisdictions." (AG Ex. 1.0, p. 33.) What is your response?

A. Mr. Mosenthal's statement mischaracterizes my direct testimony. In fact, in the line of the testimony to which Mr. Mosenthal cites (line 183), I state simply that "the program evaluation budget laid out in Section 12-103(f)(7) limits the options for evaluation approaches" in Illinois. I stand by that statement, as well as the subsequent discussion in my direct testimony regarding the particular limitations that may be placed on EM&V efforts in Illinois due to the 3% evaluation budget. Moreover, while like Mr. Mosenthal I have not done a formal survey of states, I have done an inventory of evaluation budgets across states implementing energy efficiency programs. The last inventory I conducted, in 2005, showed the average evaluation budget was around 4% of the implementation budget, an amount 33% higher than the limit in Illinois. I consider this difference to be significant, and I believe that the size of the budget allocated to conduct evaluation efforts affects the reliability of the evaluation findings. That said, I believe that ComEd's proposed EM&V process is compatible with industry standards and reflects reliable evaluation practices, particularly when considered in light of the EM&V resources available.

B. Proposed Uses of Evaluation Funds

Q. Do you agree with ELPC witness Mr. Crandall that Illinois utilities need to commission and establish a database in Illinois that is equivalent to the DEER database in California? (ELPC Ex. 1.0, pp. 8-9.)

A. Creating a DEER-equivalent database in Illinois would be an extensive effort, requiring the focusing of efforts on a number of studies and environmental aspects associated with energy segments, programs, measures, and technology use environments. DEER-type databases require evaluation studies that are reliable at the measure level (rather than at the program level). This is an effort that, as discussed in my direct testimony (ComEd Ex. 7.0, p. 10), will be difficult at the current funding level in Illinois for EM&V activities. It would be wise to instead focus the evaluation budget for ComEd's proposed Plan on program-level impact evaluations. At some point in the future, if additional evaluation funding becomes available, I would encourage the creation of a DEER-type database in Illinois. Such a database could serve to inform program goals and policy objectives by more clearly defining the energy savings that measures can be expected to achieve in Illinois.

Q. Do you agree with ELPC witness Mr. Crandall that ComEd should conduct an energy efficiency and load management potential study in its service territory at some point in the future? (ELPC Ex. 1.0, p. 8.)

A. As with the creation of the DEER-equivalent database, I agree that this would be a useful effort at some point in the future to better understand where to focus energy efficiency program dollars over the long-term, so long as the Commission finds that such a study

can be conducted with funds outside the allocated 3% evaluation budget for the programs in ComEd's Plan.

V. ComEd's Proposal that the Commission Deem Values

Q. Please summarize the parties' responses to ComEd's proposal that the Commission deem certain measure savings and net-to-gross ("NTG") ratio values in its initial approach to EM&V.

A. As described in the rebuttal testimony of Val Jensen (ComEd Ex. 12.0), although no party disagrees with the concept of deeming, only Staff witness Mr. Zuraski opposes ComEd's proposal that the Commission deem certain measure savings values in this docket for future evaluation purposes. In fact, Mr. Zuraski opposes the use of deemed values in any planning docket. In addition, AG witness Mr. Mosenthal, while supporting ComEd's proposed deemed measure savings values, raises specific concerns about ComEd's proposal that the Commission deem certain NTG ratio values. Finally, Staff raises concerns about some of the particular values set forth in Tables 6, 7 and 8 of Mr. Jensen's direct testimony (ComEd Ex. 6.0). Except for those issues discussed in Mr. Jensen's rebuttal testimony, I address these questions below.

A. Deemed Measure Savings Values

Q. Do any of the intervening parties specifically object to ComEd's proposal that the Commission deem certain measure savings values for evaluation purposes?

A. No. Notwithstanding Staff witness Mr. Zuraski's general concerns regarding the use of deemed values in planning dockets (addressed below), all parties appear to agree that ComEd's proposal to deem measure savings values is appropriate. This makes sense, and is consistent with my direct testimony, where I explained that "[a]ll states of which I am

aware use deemed savings to project their program results, and then use evaluations to adjust these values going forward." (ComEd Ex. 7.0, p. 12.) I also agree with AG witness Mr. Mosenthal that "it is reasonable to deem savings where there is a great deal of certainty about savings from past studies and to therefore focus on evaluation resources on those areas that are less certain." (AG Ex. 1.0, p. 28.) Given the general consensus among the parties regarding the use of deemed measure savings values, and their common use in other states implementing energy efficiency programs, the Commission should grant ComEd's request that it deem such values for the initial, pre-evaluation period of ComEd's three-year plan.

Q. Do you agree with AG witness Mr. Mosenthal's statement that "in some cases" it would be appropriate for the Commission to require Program Administrators "to retroactively adjust savings estimates as a result of evaluation activities?" (AG Ex. 1.0, p. 36.)

A. No. Retroactive application of new values would introduce additional uncertainty and risk to the evaluation process. If the independent evaluator later finds that one or more of the deemed measure savings values is inappropriate and provides evidence to support that assertion, the values certainly should be adjusted, but applied prospectively in subsequent Plan years and not to savings booked in the current or previous Plan year(s).

Q. Which parties raise questions about the specific measure savings values that ComEd is proposing to use for its initial evaluation?

A. Only Mr. Zuraski takes issue with some of the specific measure savings set forth in Tables 6, 7 and 8 of Mr. Jensen's direct testimony. (Staff Ex. 1.0, pp. 26-34.) Mr. Jensen addresses those concerns in his rebuttal testimony. Although Mr. Mosenthal indicates that he does not agree with the deemed values of the Program Administrators "in all

cases" (AG Ex. 1.0, p. 37-38), the specific examples he gives do not seem to apply to ComEd.

B. Deemed NTG Ratio Values

Q. Do any of the intervening parties specifically object to ComEd's proposal that the Commission deem certain NTG ratio values for evaluation purposes?

A. Yes. Mr. Mosenthal disagrees with the deeming of the NTG ratio values because, "unlike gross savings, [they] are very dependent on program design implementation, and also can significantly change over time and by area." (*Id.*, p. 30.) Mr. Mosenthal further argues that the Illinois utilities "should be responsible for showing that they actually did achieve the savings goals, not simply that they performed specific activities." (AG Ex. 1.0, p. 32.)

Q. What is your response to Mr. Mosenthal's arguments against the deeming of NTG ratio values in this proceeding?

A. I respectfully disagree with Mr. Mosenthal. I believe that it is both fair and reasonable to deem the NTG ratio values, at least initially. While I agree with Mr. Mosenthal that program design can affect NTG ratios, the estimation of NTG ratios is an imprecise business. The NTG value is simply drawn from what customers say they would have done without the program that incented them in their decision, with the answer to that question being provided months or even years after the program has already educated the customer about the benefits of saving energy. A NTG ratio value therefore has very little to do with the technical aspects of the measures being installed, and instead heavily relies on the strength of the evaluation study (as well as customer characteristics). In

reality, then, the decision to deem NTG ratio values boils down to the evaluation's level of rigor, not a policy decision.

Moreover, deeming NTG ratio values for the pre-evaluation period is particularly important in Illinois, where the evaluation budget is limited. I believe that the level of evaluation rigor required to obtain reliable NTG ratios is beyond the scope of the 3% evaluation budget, at least during this initial three-year planning period. As such, I believe it is better to use well-established deemed NTG ratio values initially, and then change the values going forward, as multiple studies are done over time and there begins to be some consistency in the new NTG values.

Q. Does Mr. Mosenthal offer an alternative to the Commission deeming NTG ratio values?

A. Yes. He recommends that "the collaborative work out appropriate NTG ratios by program and in some cases by end-use and/or technology within a program." (*Id.*, p. 34.) He acknowledges that in some cases, parties might wish only to apply these deemed values prospectively (*id.*, p. 35), but suggests in general that they be applied retroactively.

Q. Do you agree with Mr. Mosenthal's alternative recommendation?

A. No. As described in the rebuttal testimony of Michael Brandt (ComEd Ex. 9.0), ComEd has been and will continue to be involved in a non-binding collaborative process with stakeholders. Through that process, stakeholders will have multiple opportunities to review program design and implementation and to make recommendations to design and implement programs in a way that is designed to maximize NTG ratios going forward. However, without the deeming of net-to-gross ratios, ComEd could participate in the collaborative process, accept stakeholder recommendations for maximizing net-to-gross

ratios, and yet still be subject to an adverse evaluation funded at a level that may not be reliable and have no recourse.

Moreover, ComEd's commitment to the collaborative process is not inconsistent with its proposal that the Commission deem NTG ratios, for several reasons. First, as stated above, it is unlikely under the 3% evaluation budget that evaluation studies will be conducted with the rigor required to make reliable decisions regarding NTG ratios during the initial three-year planning period. Second, the collaborative will be actively involved in any decision to change the deemed values for prospective application. Third, Mr. Mosenthal's proposed retroactive application of the NTG ratios subjects ComEd to significant risk. Although the initial deemed NTG ratio values may eventually need to change, ComEd should not be penalized if this after-the-fact determination results in a lower net-to-gross estimate than is deemed.

Q. Do any parties question the specific NTG ratio values that ComEd proposes be deemed by the Commission?

A. Yes. Mr. Mosenthal claims that "NTG ratios estimated over a prior period [are] not particularly applicable to Illinois' programs." (*Id.*, p. 31.) In particular, he takes issue with the use of California net-to-gross values, arguing that net-to-gross ratios in California might be expected to be higher due to a longer history of program activity. (*Id.*, pp. 30-31, 34-35.) Mr. Zuraski states that, since many of the proposed net-to-gross values in Table 8 in the direct testimony of Val Jensen have a value of 0.8, the values are "more of a guesstimate than the result of years of empirical study." (Staff Ex. 1.0, p. 31). Mr. Zuraski reviewed the source of the values, which is the California Energy Efficiency Policy Manual, and notes that the 0.8 net-to-gross values recommended by ComEd are

considered "default" values by the California Public Utilities Commission, which developed the manual. He notes that he can find no explanation of the basis for these values, and states that I "appear[] to base 0.8 on [my] personal experience," and that "[a]s far as [he] can determine, no specific study forms the basis for 0.8." (*Id.*, p. 33.)

Q. What is your response to the criticisms regarding the use of 0.8 as a deemed NTG ratio value for the majority of measures?

A. It is inaccurate to state that "no specific study forms the basis for 0.8," implying that the number is somehow arbitrary. To the contrary, it is based on review and discussion of evaluation findings for hundreds of programs over many years. The 0.8 NTG ratio value represents the mid-point of a set of field measurements that holds fairly consistent across a wide range of measures, customers and programs. As stated above, the NTG number is not about the measure itself--the CFL installed in a residential home, for example--but rather about the program participant's feelings whether, after learning about the benefits of the energy efficient product, they would have taken the same cost-effective approach even if the program had not been in place. As you can see, the measurement is more about how a respondent sees herself and her decision-making ability than it is about the installation of any given product. Because the NTG questions are more about personal decision approaches and how one sees herself after the program's educational efforts, it is not unusual to have the same deemed NTG value across a number of different types of programs and technologies. It is not good public policy to change deemed NTG values unless you have enough supporting evidence that the new numbers are *more* accurate than the old. If you change the deemed values based on only one or two studies, then you

are just as likely to change a well-established NTG ratio value to a less accurate number than to a more accurate number, assuming the program did not change.

The 0.8 value was used for ComEd's analysis, then, because it is a historical mid-point standard and in most cases, ComEd's programs did not perfectly match the more specific programs listed on this table. All that ComEd is recommending is that this and the other NTG ratio values be adopted initially by the Commission for evaluation purposes. ComEd does not oppose, and in fact supports, further studies which could very well yield different numbers, and it does not oppose then adopting those numbers as deemed values going forward. But, particularly given the inexact science involved in determining these NTG ratio values, ComEd asks that it not be subjected to the risk that even though it might succeed by all other measures, it could still fail to meet its goals simply because an evaluator conducts a study that purports to show that the "actual" NTG value was less than ComEd has proposed and relied upon.

Q. What is your reaction to the claims that the California NTG ratios should not be used as deemed values in Illinois?

A. It is true that the 0.8 value for the NTG ratios that ComEd proposes be deemed for most programs are in fact default values used in California, and the California Public Utilities Commission recognizes that these will be adjusted as actual evaluations take place. There is no empirical reason to believe that NTG ratio values for programs implemented in California should be significantly different than those for programs implemented in Illinois. To the contrary, I believe that Mr. Mosenthal is selective in his hypotheticals (*see, e.g.*, AG Ex. 1.0, p. 31) and, in fact, one could come up with many plausible reasons why the values eventually may be higher in Illinois than California, particularly as

ComEd benefits from the California experience and the input from its stakeholders. Regardless, as noted above, reliable NTG ratios are the product of rigorous evaluation studies. The better approach with a limited evaluation budget is to choose a default value and stick with that value until enough evaluation resources have been expended to ensure that the new NTG ratio value is accurate. No party has suggested any default values that are preferable to those from California, where the most rigorous studies have been carried out.

C. Use of Deemed Values in Planning Dockets

Q. As stated above, Mr. Zuraski is opposed to the use of any deemed values in a planning docket. (Staff Ex. 1.0, pp. 41-44.) What is your reaction to his concerns?

A. Mr. Zuraski makes a number of well-reasoned points in his testimony. However, his position is an outlier, as every other state that has implemented energy efficiency programs has deemed certain non-weather-sensitive measure savings values. Further, he errs in his assumption that applying the results of Illinois evaluation studies one or two years out will get the Commission any closer to "getting the numbers ***right***." In fact, if the deemed values were to change based on one or two evaluation studies, then it is just as likely the new number will be less accurate as it is to be more accurate. This is why I suggest that when evaluation resources are limited, as they are in Illinois, the regulatory body should deem values in the planning docket for the independent evaluator to use until enough evidence is obtained to make the case that that a given NTG ratio should be adjusted up or down.

Q. Does this complete your rebuttal testimony?

A. Yes.